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NAVAL WARFARE DOCTRINE—IS IT READY FOR THE 21ST CENTURY?

by

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The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Among the challenges facing U.S. naval forces, as the 21st Century approaches, is the need to develop operational doctrine that not only accounts for the revolutionary improvements in information processing, computer modeling, smart- and brilliant-weapons technology, visualization, communications, and other promises of the *military technical revolution*, but also considers the very strong possibility that maritime operations will be multinational. The operational commander of the future must be able to integrate less capable multinational forces, as well as forces with significantly different doctrine, into his operational scheme. The need for all participants to have access—along with the United States and her major allies—to some level of battlespace "omniscience," and the need for the operational commander to integrate all sensors and weapons in some optimal way, is the crux of the burden of the military technical revolution at the operational level. Will U.S. naval doctrine only react to changes brought about by the military technical revolution or will a revolution in doctrine define 21st Century maritime operations and shape technology to fit its needs? Today's naval theoreticians and operational commanders have, in light of the remarkable changes taking place in both technology and world politics, the opportunity and responsibility to ensure that naval doctrine is ready for the demanding command and control challenges of the high-tech multinational world of 21st Century maritime warfare.

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Abstract of

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Among the challenges facing U.S. naval forces, as the 21st Century approaches, is the need to develop operational doctrine that not only accounts for the revolutionary improvements in information processing, computer modeling, smart- and brilliant-weapons technology, visualization, communications, and other promises of the *military technical revolution*, but also considers the very strong possibility that maritime operations will be multinational. The operational commander of the future must be able to integrate less capable multinational forces, as well as forces with significantly different doctrine, into his operational scheme. The need for all participants to have access—along with the United States and her major allies—to some level of battlespace "omniscience," and the need for the operational commander to integrate all sensors and weapons in some optimal way, is the crux of the burden of the military technical revolution at the operational level.

Will U.S. naval doctrine only react to changes brought about by the military technical revolution or will a revolution in doctrine define 21st Century maritime operations and shape technology to fit its needs?

Today's naval theoreticians and operational commanders have, in light of the remarkable changes taking place in both technology and world politics, the opportunity and responsibility to ensure that naval doctrine is ready for the demanding command and control challenges of the high-tech multinational world of 21st Century maritime warfare.

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> ...coping with the challenges of future warfare is
> easier to discuss than to put into practice.
> —Douglas A. MacGregor
> "Future Battle: The Merging Levels of War"[1]

I. Introduction

Future maritime operations involving U.S. forces will, in many cases, be of a multinational nature. The United States will remain a member of established defense alliances (e.g., NATO) where operating, and command and control (C^2) procedures will not only exist, but will be exercised frequently. This is not necessarily true for all of the United States' potential coalition partners. At the same time, U.S. forces will inevitably continue to take advantage of revolutionary improvements in information processing, computer modeling, smart- and brilliant-weapons technology, visualization, communications, etc. Some analysts believe that this new high-tech world offered primarily by the rapid development of sophisticated micro-electronics and cybernetics,[2] and the resulting changes in the ways future wars will be fought has created a so-called "revolution in military affairs"[3] or "military technical revolution"[4] similar to that seen by the introduction of gunpowder in the 14th Century. The level to which the United States' allies and coalition partners will be able to exploit new technologies will vary greatly among countries. The introduction of new weapons and sophisticated C^2 systems has already had a significant influence on U.S. military doctrine. For example, the Joint Chiefs of Staff have issued a separate publication, *Joint Pub 6-0,* **"Doctrine for Command, Control, Communications, and Computer (C^4) Systems Support to Joint Operations,"**[5] which highlights the complexities and implications of the expansion of U.S. C^4 capabilities. *Naval Doctrine Publication 1,* **"Naval Warfare,"**

discusses the "...profound implications [of C^4] for the ways naval forces will...fight our nation's wars," but does not deeply develop the theme.[6] Doctrine guiding multinational maritime operations must address not only advanced capabilities of the most modern naval units, but of equal importance, it must resolve issues associated with the asymmetries in capabilities inherent to a combined, multinational force.

It is critical that U.S. maritime doctrine be closely coordinated with that of major allies. To this end, both the United States and the United Kingdom have recently developed formal naval doctrine which attempts to address the issue of multinational maritime operations. Additionally, the Naval Doctrine Command has taken the lead in developing an operational level doctrine document, *Multinational Maritime Operations* **(MMOPS)**[7], as a supplement to the series of tactical level documents designated by NATO as the "1000 Series EXTACs (Experimental Tactics)." The EXTACs are designed to "provide a common body of doctrine for use in multinational maritime operations and exercises" to nations operating with NATO, but not members of the alliance[8]. Doctrine in both the MMOPS at the operational level, and the appropriate EXTACS at the tactical level, must seriously address the issue of the potential for grossly asymmetrical capabilities in C^2, sensors, and weapons systems of other coalition partners, and to some degree possible asymmetries even among the major allies themselves.

The issue is important enough that failure to do so may result in a less than optimal force capabilities mix in future multinational operations. The military technical revolution, rather than improving the operational commander's lot, may exacerbate those problems of C^2 that have always existed during multinational operations and exhibit themselves as the *fog and friction* of war.

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> But machines, no matter how magnificent,
>
> do not of themselves constitute a revolution.
>
> True revolutions happen, above all in the minds of men.
>
> —Ralph Peters
>
> "After the Revolution"[9]

II. Evolution of the Operational Level of War.

Any discussion of the effect of the military technical revolution on multinational operations doctrine needs to begin with a discussion of just what the operational level of war is and how it is changing. The operational level is essentially that in which the pursuit of strategic objectives is translated into tactical actions through the planning, execution, and sustaining of campaigns or major operations. The activities of the operational level commander "imply a broader dimension of time or space than do tactics."[10] Douglas MacGregor stresses that "the technologically altered [future] battlefield dimensions of time and space will merge the three levels of war [strategy, operations, and tactics] into a single new structure for the integration of complex air-land-sea combat operations."[11] He argues that failure to recognize the evolution of the three levels of war in the past prevented operational level commanders from being able to "adapt and adjust" to increased tempos and extended battlefields.[12] He uses the example of the French Ulm campaign of 1805 as the first significant use of operational depth, expanding the borders of the battlefield to those of the theater of war. Napoleon was willing to "delegate command, to accelerate the tempo..., to risk dispersion on the approach march, and to concentrate...independent bodies of troops at critical points." Napoleon transformed the concept of space and time in battle[13] from the battlefield and the battle to the area of operations and the operation.

The next significant expansion of the responsibilities of the operational commander came about through the ideas of British theoreticians Basil Liddel Hart and J. F. C. Fuller, and especially those of German General Staff Officer Heinz Guderian—inventor of the *blitzkrieg* ("lightning war") and leader of the German drive across France in 1940.[14] For the first time, there were real-time communications between the tactical leaders on the battlefield and their operational commander, allowing him to react quickly to changing circumstances in the theater. Failure of the British, American, and French armies to understand the significance of the increased tempo of the 1940 *blitzkrieg* "combined with innovative technology...created a warfighting environment which was critically unbalanced in favor of the attacking German armies."[15]

The 1991 Arabian Gulf War, according to MacGregor, represents the third major "merging" of the levels of war into that controlled by the operational commander. Iraq was subjected to "a new form of multidimensional envelopment" by precise deep strike weapons from land, ships, and aircraft. Target selection was provided by a suite of sophisticated sensors based in space and on aircraft. The operational commander, General H. Norman Schwarzkopf, "was technologically positioned to influence action [anywhere in the battlespace that] he regarded as critical to the campaign's success...[compelling] Iraqi forces throughout the theater...to operate as though they were all within visual range of American [and coalition] forces."[16] Coalition command, control, communications and intelligence (C^3I), unity of command, deep and precise operational fires, and high operational tempo caused the strategic, operational, and tactical levels to "begin to overlap and interpenetrate to a substantial degree."[17]
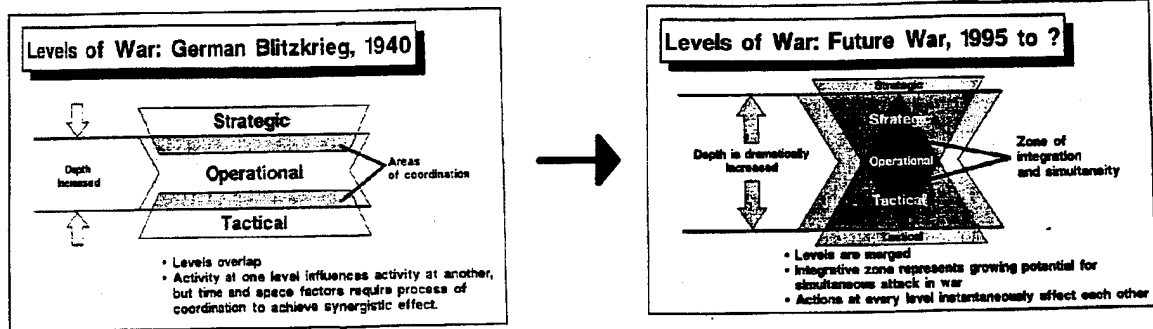
MacGregor sees the fourth evolution of the three levels of war similarly to the vision espoused in Admiral Owens' four technical-operational concepts:

- Omniscience based on advanced surveillance and target-acquisition systems and technologies;
- Synergistic integration based on advanced C3I [Command, Control, Computers, and Intelligence] systems;
- Immune power projection based on a family of standoff, precision-guided weapons, as well as space and electronic-warfare capabilities, and ballistic-missile defenses;
- Battlefield support based on new means of providing fire support from the sea, close air support, and a communications and intelligence system that allows naval forces a better perspective on an understanding of ground-force operations.[18]

While Admiral Owens does admit that omniscience "is an exaggeration," he insists it should be the goal of the naval commander. Even if the U.S. military never quite reaches the Owens goal, the difference in information and intelligence capabilities between the United States and potential enemies is "almost certain to be a growing transparency on the part of potential military opponents of the United States [and her major coalition partners] in both relative and absolute respects."[19] Some proponents of the revolution in military affairs believe that a transformation of command in war from three distinct levels with coordination between levels, to a vision where all levels are essentially merged (Figure 1), as demonstrated in the Gulf War, has already begun.[20]

The 21st Century operational commander will have to contend not only with the ever improving technology at his disposal (and of potential use against him), but also with the increased likelihood that future operations will be multinational. He must be able to integrate less capable forces, as well as forces with significantly different doctrine, into his operational (and if MacGregor is correct, tactical) schemes. At the same time, he and his staff must provide to the strategic-level command authorities ever more near-real-time information and

Levels of War: German Blitzkrieg, 1940

Strategic

Operational

Tactical

Depth increased

Areas of coordination

- Levels overlap
- Activity at one level influences activity at another, but time and space factors require process of coordination to achieve synergistic effect.

Levels of War: Future War, 1995 to ?

Strategic

Operational

Tactical

Depth is dramatically increased

Zone of integration and simultaneity

- Levels are merged
- Integrative zone represents growing potential for simultaneous attack in war
- Actions at every level instantaneously effect each other

(From MacGregor, *Future Battles: The "Merging Levels of War,"* Figures 2 and 4)

Figure 1. Increasing responsibility of the operational
commander as the strategic, operational, and
tactical levels of war in the 21st century merge.

his tactical-level commanders with more and more guidance, battlespace information, and

coordination.

The pertinent question is: Will U.S. naval doctrine only react to changes brought about

by the military technical revolution or will a revolution in doctrine define 21st Century

maritime operations and shape technology to fit its needs?

> Technology alone does not a revolution make;
> how military organizations adapt and
> shape new technology, military systems,
> and operational concepts matter much more.
>
> —Thomas A. Keaney and Eliot A. Cohen
> *Gulf War Air Power Survey Summary Report*[21]

III. Naval Warfare Doctrine—Is It Ready for the 21st Century?

Formalized naval doctrine in the United States is a fairly recent phenomenon. This does not imply that the U.S. Navy had no doctrine; the doctrine was embedded in naval traditions and in important treatises on naval warfare. The most important of these during most of the 20th Century were those set down by Mahan after the Spanish-American War.[22] His writings were the cornerstone of U.S. Naval Doctrine, emphasizing command of the sea and annihilation of the enemy's fleet as the primary purpose for the existence of navies. Mahan's ideas lasted as the primary basis of U.S. naval doctrine until the development in the early 1980s of the "Maritime Strategy" by Chief of Naval Operations Admiral Thomas Hayward, Secretary of the Navy John Lehman, Jr., and ultimately, by Admiral Hayward's successor, Admiral James Watkins.[23] Naval thinking in the United States has significantly evolved over the last decade even before the breakup of the Soviet Union. It has taken on a character more closely associated with the doctrine discussed by Corbett in his treatise, *Some Principles of Maritime Strategy*[24]. Corbett stresses the use of naval forces in support of land forces while controlling the local sea areas, not necessarily total command of the sea. Corbett's thinking is evident in the seminal U.S. naval documents, *...From the Sea*[25], and *Forward...From the Sea*[26]. These documents, developed in response to the changing world

situation and in response to the *National Military Strategy*[27], have formed the basis for modern U.S. naval doctrine.

As U.S. naval doctrine was being formalized in the 1990s, many of the well-known characteristics of land-war doctrine became evident, especially the so-called "principles of war,"[28] including mass, maneuver, the offensive, cooperation (unity of command), and surprise, among others. In *Naval Doctrine Publication 1 , Naval Warfare* (NDP-1), both attrition and maneuver warfare are mentioned as "common doctrine,"[29] but there is a definite bias toward maneuver warfare in the discussion of "How we fight." The conduct of successful maneuver warfare demands particular attention to rapid tempo as well as the principles of war listed above. This necessitates that "commanders be provided timely, accurate intelligence to find enemy weaknesses, enough decentralization to allow subordinate commanders to exploit opportunities, and clearly understood and well-rehersed procedures at the lowest levels."[30] NDP-1 stresses the importance of having a rapid decision cycle: "Tempo is more than a means to employ weapons better; it is a weapon itself." NDP-1 further emphasizes that rapid tempo maneuver warfare "...is an aggressive style of warfare in which we gain advantage by observing the enemy, orienting ourselves to these surroundings, deciding on a move, and acting more rapidly than the enemy."[31]

Rapid tempo is a key element positively influenced by the military technological revolution. Likewise are the **principles of war** concepts of: Concentrate combat power at "the decisive time and place" (Mass); "Place the enemy in a position of disadvantage through the feasible application of combat power" (Maneuver); "Seize, retain, and exploit the initiative" (Offensive); "Ensure unity of effort for every objective under one responsible commander" (Unity of command); and "Strike the enemy at a time or place or in a manner for

which he is unprepared"[32] (Surprise). NDP-1 touches on many of the factors influenced by the military technical revolution, but does not address the need for possibly rethinking the entire framework of naval warfare considering the operational implications of the military technical revolution. NDP-1 does hint at it in the following statement:

> Modern battlespace is multidimensional. Navy and Marine Corps operations encompass air, surface, subsurface, land, space, and time. Dominance of these dimensions continues to be an important factor in the survival and combat effectiveness of our force. [C²] integrates ships, submarines, aircraft, and ground forces, so their full range of capabilities can be extended effectively throughout our battlespace.[33]

Whereas NDP-1 does not have multinational operations as a focus, the UK doctrine, *The Fundamentals of British Maritime Doctrine* (BR-1806)[34], has a section dedicated to **combined** operations which immediately addresses the problems of operations involving "forces with different national equipment and *doctrine*, often with specific political constraints on their employment." BR-1806 does discuss the "Degrees of Operational Co-operation of Multinational Forces," especially how "capabilities and *interoperability*" control this level of cooperation.[35] Additionally, BR-1806 concerns itself, although in only a cursory way, with fully integrated or combination command structures, and with the problems with coordination of this command arrangement.[36] The British doctrine does focus on solving command problems by use of "effective communication links" and interoperability of C^2 communications hardware. Additionally, it recognizes the flip-side of the increasing "amount of information available to the commander" and the resulting reduction in "the time available for decision making." The British solution is a combined staff "frequently exercised in processing, analyzing and dispatching information quickly and accurately using an appropriate support system."[37] BR-1806 stresses that "Commanders [and I would add subordinate decision

makers] must have a clear grasp of current *doctrine*... [to] fully comprehend their orders....A knowledge of doctrine...also allow[s] commanders to make decisions in accordance with the intentions of their superiors even when they are out of contact with higher levels of command."[38] While the above is vital to all maritime operations, BR-1806 concedes that many multinational operations will "involve forces with different national equipment and *doctrine*."[39] BR-1806 intentionally links "system capabilities and personnel matters," because "combat at and from the sea" requires the total integration of "high technology equipment, complex command, control and information systems and highly trained and motivated personnel...." BR-1806 continues by discussing the vital concept [similar to Admiral Owens' vision] of the meshing of ships, aircraft, and ground forces both horizontally and vertically from the force commander to the individual and his equipment.[40]

Joint Pub 3-0, "Doctrine for Joint Operations," in Chapter VI, "Multinational Operations," stresses that Joint Force Commanders must "implement measures to assess the capabilities, strengths, and weaknesses of member forces to facilitate **matching missions with capabilities**...Where member forces have **unique or special capabilities**, they should be appropriately exploited." The publication continues by discussing the use of linguists and area experts to overcome cultural and language differences, but does not focus on the solution to technological asymmetries other than by robust liaison between forces and the "sharing of resources consistent with U.S. and alliance [policy]."[41]

The Naval Doctrine Command draft document, *Multinational Maritime Operations (MMOPS)*, states that the overriding principle for multinational operations is "a well understood and agreed objective...[and] unity of effort in its achievement."[42] Based on the level of interoperability between the allied naval forces, three basic command structures can be

used: "...Parallel command...Lead nation command, [and] Integrated command." Similar to the British BR-1806, MMOPS states that "shared doctrine and publication are fundamental to any successful multinational maritime operation."[43] The previously mentioned EXTACs are one solution to this problem. MMOPS identifies other problems and solutions for the issues of language, liaison officers, information exchange, and force coordination. It is particularly important that MMOPS stresses the need for "...**all participants** [to have] a **common tactical picture**, including the **disposition, position and movements of friendly, neutral and opposing forces**..."[44] [emphasis added].

The need for **all participants** to have access—along with the United States and her major allies—to some level of battlespace "omniscience," and the need for the operational commander to integrate all sensors and weapons in some optimal way, is the **crux of the burden of the military technical revolution** at the operational level. Present doctrine, while discussing the issues presented here, has not attacked the problem head-on. If the United States and major allies do not anticipate and ultimately solve the problem of asymmetrical capabilities in both C^2, sensors, and weapons, the United States could possibly be forced into a situation where—because of her unique capabilities (possibly supplemented by major NATO allies)—she would only use coalition partners to lend legitimacy to her operations, but not allow them to add substantial military resources to the fight. This is not a situation the United States or her allies and coalition partners would find palatable in the long run. It is hard to imagine public sentiment and political institutions of the United States supporting unilateral combat not directly associated with defense of the homeland and associated vital interests. The legitimacy supplied by allies and coalition partners to U.S. military operations is at least

as important for domestic consumption as for foreign relations. Likewise, many nations

would not accept U.S. military intervention without coalition status, because of their domestic

politics.

The United States is compelled by its military strength, its leadership in NATO and

other alliances, and its dependence on international trade, to remain engaged in world affairs.

Politics at home and abroad will almost always compel the United States to form a coalition

when military action is required.

Development of naval doctrine depends not only on the ships, aircraft, weapons, and

technology available to a nation, but must also reflect the national security strategy and

political reality of "How we will fight." The recent establishment of the Naval Doctrine

Command is a good first step. Codification of U.S. naval doctrine is critical to the

development of future "operational artists." While present naval doctrine is adequate to get

the United States through the end of the 20th Century, it will not in its present state suffice for

the 21st. The United States needs, in concert with the military technical revolution, a naval

doctrinal revolution or, at least an significant evolution. Innovative thought at the Naval

Doctrine Command, the Naval War College, and by both senior and junior U.S. and allied

naval personnel must be harnessed to **understand and control** the military technical

revolution.

IV. Conclusion

Headlines in the Defense News issue of April 22-28, 1996, stated that "NATO Allied Develop Combat ID Systems to Stop Fratricide." Germany, France, Britain, and the United States are cooperating in the development of combat identification systems (similar to friend-or-foe systems used on combat aircraft). The article says that Paul Kaminski, U.S. Undersecretary of Defense for Acquisition and Technology "likened the effort to creating a nervous system on the battlefield, in which combat ID systems will be augmented with ...surveillance technologies, [C^2] systems and location reporting technologies.[46] Every issue of Defense News contains similar articles.

Just how willing the United States and her allies will be in sharing this and many other C^3I technologies with non-NATO states will be a major influence on how the operational commander will be able to use the forces at his disposal. The temptation to geographically separate forces of different capabilities can lead to the nullification of "the synchronized impact of mutual support and threatens the security of coalition forces by imposing isolation."[47] At the same time, nations such as those developing sophisticated C^3I systems need to be concerned with the potential exploitation of advanced technology by those nations who can be categorized as being both a potential enemy and a coalition partner, depending on the circumstances.

The complexity of the operational commander's responsibilities will only increase as we approach the 21st century. MacGregor believes that new doctrinal constants governing the operational commander in future wars will

> ...move beyond the old Jominian-Clausewitzian categories of the linear battle, executed in time-phased sequences, with the levels of war fastidiously differentiated...force[ing] commanders to rely less on prewar planning and more on **prewar education** and leadership training...[48] [emphasis added].

He also stresses that "technologically compressed decision cycles will compound operational errors."[49] The operational commander whose forces are not fully integrated will be unable to avoid making errors concerning coalition forces not in his real-time knowledge window.

One solution to the problem would be to admit up front that there are at least three levels of partners and develop operational doctrine to suit each. For example, the traditional allies of the United States in NATO, with the possible addition of Japan, would be allowed to share in both the advanced technology and systems integration of sophisticated C^3I. For NATO nation maritime groups to operate as an effective, cohesive force during a major war or in a situation where advanced weapons systems are a threat, total integration from the operational commander to the tactical leader is vital. The combination of truly integrated allied forces "effectively extends the range and geographic influence of our battlespace."[50] These forces will need to receive and be able to use more information "over an increasingly compressed span of time,"[51] and as a result have a much better chance of operating significantly inside the enemy's decision cycle.

A second level would be those nations whose maritime forces are not doctrinally integrated and technologically capable of being totally C^3I-meshed with U.S. and NATO

forces. A combination of portable C^3I systems and area specialists—naval officers and senior enlisted with extensive country and language training—could possibly fill the gap.

The third level would be those nations with whom we cannot afford for security reasons to share advanced technology or nations with limited maritime capability, whose roles would be to perform a somewhat independent, restricted mission (mine warfare, for example) under the protective umbrella of the advanced coalition partners.

One can visualize future doctrine possibly being designed to accommodate a matrix of individual states or groups of states versus the **operational capability** to perform multinational command, control and surveillance functions, battlespace dominance, power projection, and force sustainment, among others.

In all cases the United States maritime leaders need to understand that "common equipment...can't ensure interoperability...common language, common procedures, common tactics, **common doctrine** and , especially...common standards are required"[52] (emphasis added). Expanded opportunities are needed for education similar to that currently available at the nation's war colleges. The development of a naval "area officer" program to assist potential coalition partners in developing and, ultimately, executing operations based on standardized doctrine should be seriously considered. Every naval officer, regardless of rank, should be expected to be familiar with the **basic** U.S. joint and naval doctrinal texts. All senior officers should be conversant in **all** areas of operational level joint and naval doctrine. Doctrine exists not only to be read, but should constantly be updated from lessons learned by all operational naval commanders.

The operational commander of the 21st Century will face challenges in command and control unimaginable to us in the 20th. The writings of Mahan, Corbett, and others of the late

19th and early 20th Centuries have guided the naval thinking of the United States and her

allies until the present. Today's naval theoreticians and operational commanders have, in light

of the remarkable changes taking place in both technology and world politics, the opportunity

and responsibility to be the "Mahans" and "Corbetts" of the 21st Century.

NOTES

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[48] MacGregor, 43-44.

[49] Ibid., 44.

[50] U.S. Navy, Department of, *Naval Doctrine Publication 1: Naval Warfare*, (Norfolk, VA: Naval Doctrine Command, 1993), 63.

[51] James V. Huston, Lieutenant Colonel, U.S. Marine Corps, "The Revolution in Military Affairs and Operational Maneuver From the Sea," Unpublished Research Paper, U.S. Naval War College, Newport, RI: 1995, 11-12.

[52] E.E. McKnight, quoted in Robert J. Brooks, Lt Col, USAF, "Joint Command and Control - Search for the Holy Grail," Unpublished Research Paper, Air War College, Air University, Maxwell Air Force Base, AL, 1988.

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